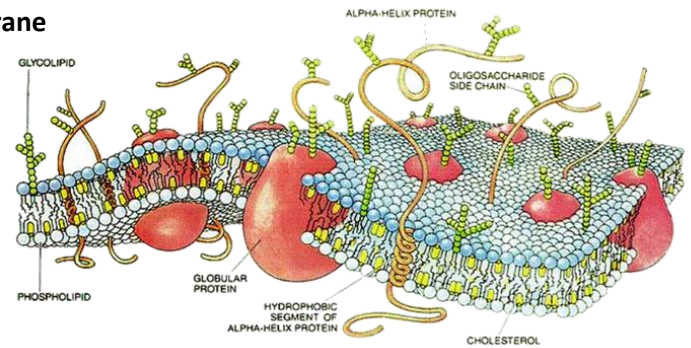


## The Cell Membrane



### Functions of the Cell Membrane

#### 1) Barrier

- 
- 

#### 2) Selective Transport

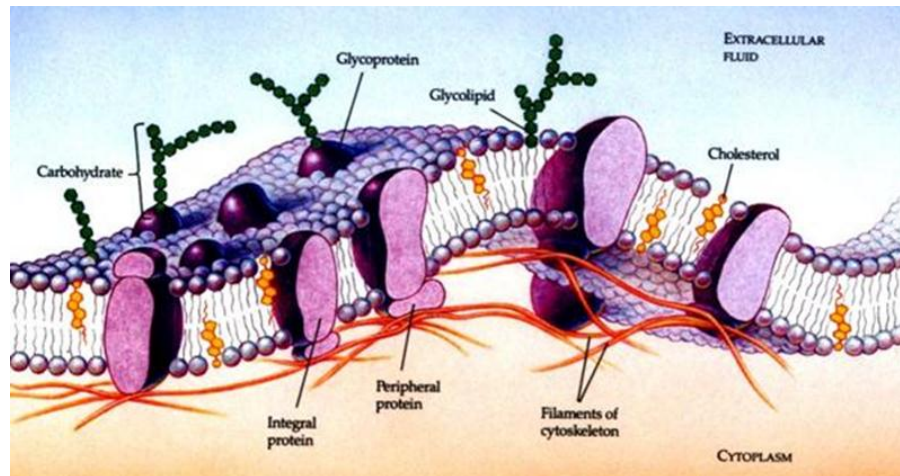
##### A) Passive Transport

- the movement of substances down a \_\_\_\_\_ and does not require \_\_\_\_\_.
- i) **Bulk flow** is the collective movement of substances in the \_\_\_\_\_ in response to a force, such as \_\_\_\_\_.
- ii) **Simple diffusion**, or diffusion, is the net movement of substances from an area of \_\_\_\_\_ concentration to an area of \_\_\_\_\_ concentration. This movement occurs as a result of the \_\_\_\_\_ characteristic of all molecules, and is independent from the motion of other molecules.
- iii) **Facilitated diffusion** is the diffusion of solutes through \_\_\_\_\_ in the plasma membrane.
- iv) **Osmosis** is the diffusion of \_\_\_\_\_ molecules across a selectively permeable membrane. When water moves into a body by osmosis, hydrostatic pressure or osmotic pressure may build up inside the body.
- v) **Dialysis** is the diffusion of solutes across a \_\_\_\_\_.

##### B) Active Transport

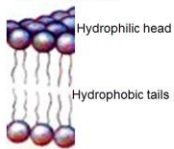
- the movement of solutes \_\_\_\_\_ and requires the \_\_\_\_\_ of energy, usually in the form of \_\_\_\_\_. Active transport is achieved through one of these two mechanisms:
- i) **Protein Pumps:**
  - Transport proteins in the plasma membrane transfer solutes such as small ions (\_\_\_\_\_), amino acids, and monosaccharides.
  - The proteins involved with active transport are also known as \_\_\_\_\_.
- ii) **Vesicular Transport:**
  - Vesicles or other bodies in the \_\_\_\_\_ move macromolecules or large particles across the plasma membrane.
  - a) **Exocytosis:**
    - the process of vesicles fusing with the plasma membrane and releasing their contents to the \_\_\_\_\_ of the cell. This process is common when a cell produces substances for export.
  - b) **Endocytosis:**
    - the capture of a substance \_\_\_\_\_ the cell when the plasma membrane merges to engulf it.
    - the substance subsequently enters the cytoplasm enclosed in a vesicle.
    - there are two kinds of endocytosis
    - **Phagocytosis or cellular eating**, occurs when the dissolved materials enter the cell. The plasma membrane engulfs the solid material, forming a phagocytic vesicle.
    - **Pinocytosis or cellular drinking** occurs when the plasma membrane folds inward to form a channel allowing dissolved substances to enter the cell. When the channel is closed, the liquid is encircled within a pinocytic vesicle.

## Components of the Cell Membranes



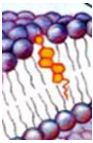
### 1. Phospholipids

Outside of cell  
Extracellular Fluid



Inside of cell  
Cytoplasm

### 2. Cholesterol



### 3. Proteins



Integral  
membrane  
protein



Peripheral  
membrane  
protein

Integral  
membrane  
protein

### 4. Glycocalyx

